

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

| | | |
|--|---|---|
| Applicant's or agent's file reference 51761 | FOR FURTHER ACTION | See item 4 below |
| International application No. PCT/IL2004/000667 | International filing date (<i>day/month/year</i>) 22 July 2004 (22.07.2004) | Priority date (<i>day/month/year</i>) 22 July 2003 (22.07.2003) |
| International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237 | | |
| Applicant KINOR TECHNOLOGIES INC. | | |

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).

2. This REPORT consists of a total of 7 sheets, including this cover sheet.

In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

3. This report contains indications relating to the following items:

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|-------------------------------------|--------------|---|
| <input checked="" type="checkbox"/> | Box No. I | Basis of the report |
| <input type="checkbox"/> | Box No. II | Priority |
| <input type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| <input type="checkbox"/> | Box No. IV | Lack of unity of invention |
| <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/> | Box No. VI | Certain documents cited |
| <input type="checkbox"/> | Box No. VII | Certain defects in the international application |
| <input type="checkbox"/> | Box No. VIII | Certain observations on the international application |

4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).

| | |
|---|--|
| The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland | Date of issuance of this report 23 January 2006 (23.01.2006) |
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PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:
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REC'D 24 JAN 2005

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WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing
(day/month/year) 18 JAN 2005

Applicant's or agent's file reference

51761

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/IL04/00667

International filing date (day/month/year)

22 July 2004 (22.07.2004)

Priority date (day/month/year)

22 July 2003 (22.07.2003)

International Patent Classification (IPC) or both national classification and IPC

IPC(7): G06F 17/30 and US Cl.: 707/2, 3, 4, 5, 10, 100, 101

Applicant

KINOR TECHNOLOGIES INC.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/ US

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Form PCT/ISA/237 (cover sheet) (January 2004)

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/IL04/00667

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This opinion has been established on the basis of a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).

2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

☐ a sequence listing

☐ table(s) related to the sequence listing

b. format of material

☐ in written format

☐ in computer readable form

c. time of filing/furnishing

☐ contained in international application as filed.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/IL04/00667

Box No. V Reasoned statement under Rule 43 *bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

| | | |
|-------------------------------|---------------------|-----|
| Novelty (N) | Claims <u>NONE</u> | YES |
| | Claims <u>1-117</u> | NO |
| Inventive step (IS) | Claims <u>NONE</u> | YES |
| | Claims <u>1-117</u> | NO |
| Industrial applicability (IA) | Claims <u>1-117</u> | YES |
| | Claims <u>NONE</u> | NO |

2. Citations and explanations:

Please See Continuation Sheet

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/IL04/00667

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

V. 2. Citations and Explanations:

Claims 1-6, 9-15, 19 lack novelty under PCT Article 33(2) as being anticipated by Amit Shah ("Source Specific Query Rewriting and Query Plan Generation for Merging XML-based Semi-structured Data in Mediation System", 2001), hereinafter "Shah".

As per claim 1, Shah teaches a method for data access, comprising:

"defining an ontology for application to a set of diverse data sources comprising data having predefined semantics" at page 39, 1st paragraph;

"associating with the ontology one or more logical rules applicable to the semantics of the data in the data sources" at page 4, last paragraph;

"receiving a query from a user regarding the data" at page 41, 2nd paragraph;

"determining a query plan for responding to the query by selecting one or more of the data sources responsively to the ontology and by identifying an operation to be applied to the data responsively to the applicable logical rules" at page 41, 2nd paragraph;

"generating a response to the query in accordance with the query plan" at page 41, 2nd paragraph.

As per claim 2, Shah teaches the method according to claim 1, wherein "the logical rules comprise a validation rule, and wherein the query plan comprises validating the data from at least one of the data sources responsively to the validation rule" at page 32, 2nd paragraph.

As per claim 3, Shah teaches the method according to claim 1, wherein "the logical rules comprise a mapping rule, such that at least one of the data sources is mapped to the ontology in accordance with the mapping rule, and wherein the query plan comprises determining an applicability of the at least one of the data sources to the query responsively to the mapping rule" at page 42, 1st paragraph and page 66, 1st paragraph.

As per claim 4, Shah teaches the method according to claim 1, wherein "the logical rules comprise a joining rule, and wherein the query plan comprises selecting a key responsively to the joining rule, and joining the data from two or more of the data sources using the key" at pages 45-46, section 5.2.

As per claim 5, Shah teaches the method according to claim 4, wherein "selecting the key comprises analyzing the data so as to select one or more fields in the two or more of the data sources for use as the key so as to provide a desired statistical probability that the data will be joined correctly at pages 45-46, section 5.2.

As per claim 6, Shah teaches the method according to claim 1, wherein "the logical rules comprise a transformation rule, and wherein the query plan comprises transforming the data in at least one of the data sources from a first value that is held in the at least one of the data sources to a second value responsively to the transformation rule" at page 42, 1st paragraph.

As per claim 9, Shah teaches the method according to any of claims 1-8, wherein "defining the ontology comprises

**WRITTEN OPINION OF THE
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International application No.
PCT/IL04/00667

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

associating a respective wrapper with each of the data sources, so as to transform the data from each of the data sources from a native format to an ontological format determined by the ontology, and wherein generating the response comprises applying the operation using the wrapper, and then reporting the data from the wrapper to a hub that links the data sources following application of the operation" at page 39, 1st paragraph and page 41, 2nd paragraph.

As per claim 10, Shah teaches the method according to claim 9, wherein "the operation applied by the wrapper comprises joining the data from two or more of the data sources" at page 62, 2nd paragraph.

As per claim 11, Shah teaches the method according to claim 9, wherein "the operation applied by the wrapper comprises mapping values of the data" at page 42, 1st paragraph.

As per claim 12, Shah teaches the method according to claim 11, wherein "mapping the values comprises normalizing the data from a native representation to an ontological representation" at page 42, 1st paragraph.

As per claim 13, Shah teaches the method according to claim 9, wherein "the query plan comprises a group of subqueries, and wherein generating the response comprises sending the sub-queries from an agent running on the hub to respective wrappers of a plurality of the data sources, and combining the data reported from the wrappers in order to produce the response" at the paragraph bridging pages 70,71.

As per claim 14, Shah teaches the method according to claim 13, wherein "sending the sub-queries comprises invoking two or more of the wrappers to operate in parallel" at page 50.

As per claim 15, Shah teaches the method according to claim 9, wherein "associating the respective wrapper comprises distributing an advertisement of each of the data sources in accordance with the ontology, and wherein determining the query plan comprises discovering each of the data sources responsively to the advertisement, and building the query plan based on the discovered data sources" at page 41, 2nd paragraph.

As per claim 19, Shah teaches the method according to any of claims 1-8, wherein "determining the query plan comprises collecting information regarding a topology and performance characteristics of the data sources, and selecting, responsively to the information, the data sources to be used in responding to the query" at page 70, last paragraph.

Claims 7-8, 16-18 lack an inventive step under PCT Article 33(3) as being obvious over Shah in view of Wachtel (US 2002/0194181A1), hereinafter "Wachtel".

As per claim 7, Shah teaches the method according to claim 1 as discussed above. Shah teaches the step of generating the query plan comprise processing the data from at least one of the source responsively to a set of logic rule" at but does not explicitly teaches: "the logical rules comprise a business logic rule" as claimed. Wachtel teaches a similar method for information access using Ontology and a set of logical rules at page 1, [0010] and page 5, [0071], wherein "the logical rules comprise a business logic rule" at page 5, [0070]. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine Shah and Wachtel's teachings so that the system could be used with a particular business process and return an appropriate search results based on the business process.

As per claim 8, Shah teaches the method according to claim 1, Shah teaches the step of generating the query plan comprise processing the data from at least one of the source responsively to a set of logic rule" at but does not explicitly teaches: "the logical rules comprise an access rule, and wherein the query plan comprises selecting at least one of the data sources for use in generating the response responsively to the access rule as applied to the user who submitted the query" as claimed. Wachtel teaches a similar method for searching information using Ontology and a set of logical rule at page 1, [0010] and page 5, [0071], wherein : "the logical rules comprise an access rule" at page 5, [0067]-[0068]. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine Shah and Wachtel's teachings in order to limit the system to search only data sources available to that user, and therefore reduce wasting time searching for data sources in which user access is restricted.

As per claim 16, Shah teaches the method according to claim 9, Wachtel teaches: "wherein reporting the data comprises sending data packets over a network, the packets comprising semantic content in a form determined by the ontology, and upon receipt of the data packets at the hub, verifying legitimacy of the packets responsively to the semantic content" at page 9, [0132].

As per claim 17, Shah teaches the method according to claim 9, Wachtel teaches: "wherein reporting the data comprises streaming the data from the wrapper to a specified storage location" at page 10, [0134].

As per claim 18, Shah teaches the method according to claim 9, Wachtel teaches: "wherein reporting the data comprises moving the data in a block operation from the wrapper to a specified storage location" at page 10, [0134].

Claims 19-117 recite similar limitations as discussed in claims 1-18 above, and therefore claims 19-117 are either anticipated by Shah

**WRITTEN OPINION OF THE
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PCT/IL04/00667

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In case the space in any of the preceding boxes is not sufficient.

or lack of inventive steps as being obvious over Shah in view of Wachtel as discussed above.